REMARKS/ARGUMENTS

Claims 1-3, 7-14, 17-21, 23, 29-30, 32-41, 44-45, 51-53, 56, and 132-140 remain in this application. Claim 132 has been amended. Claims 4-6, 15-16, 22, 24-28, 31, 42-43, 46-50, 54-55, 57-131 have been cancelled.

1. § 103 Rejections

The Examiner has rejected claims 1-3, 7-14, 17-21, 23, 29-30, 32-41, 44, 45, 51-53, 56 and 132-140 under 35 U.S.C. § 103(a) as being unpatentable over Kyoto (5158587) alone, or in view of Walker (4178347), Dobbins (5043002), Biswas (4575463), Simms (4339256) and Korenowski (4118295).

According to the Examiner, "Example 2 of Kyoto discloses the providing step and all of the contacting, except for the flow rate limitation and the decreasing partial pressure. Kyoto's example 2 also does not disclose the evacuating and refilling. However, based on col. 2, line 63 and example 1, Kyoto also teaches doping without any gas flowing out. Alternatively, it would have been obvious to have no gas flowing out, because if any gas flows out, the pressure is not being maintained." (Final Office Action, page 3).

In response to Applicant's previous arguments, the Examiner noted, "the rejection also does make a reasonable case that Kyoto (alone) establishes inherency . . . Since the gas does not flow out, and since fluorine is leaving the gas and entering the preform, there are fewer atoms of fluorine in the gas thus the partial pressure would necessarily/inherently decrease." (Final Office Action, page 8).

Applicants submit that this rejection is traversed. As stated in the MPEP, "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" (MPEP § 2112, citing *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)).

In arguing that Kyoto inherently meets claim 1, the Examiner points to Example 1 and col. 2, line 63 of Kyoto. However, neither of these portions of Kyoto results in a partial pressure of a first halogen-containing gas that decreases during a first or a second reaction time. Example 1 of Kyoto states that "a pure silica soot preform was heated in the vessel 3 containing pure SiF_4 under pressure of 4 atm. at 1,100° C. for 2 hours . . . ." (Kyoto, col. 4, ll. 16-18). Thus, contrary to the Examiner's assertion, Example 1 indicates that the pressure of pure SiF_4 was maintained at 4 atm for 2 hours. Nothing in this example indicates that the pressure of SiF_4 was allowed to decrease, let alone that the pressure of SiF_4 in the vessel would necessarily decrease as a result of practicing this example.

Similarly, col. 2, line 62 of Kyoto merely states that "[p]referably, SiF_4 is flowed into the atmosphere." Even assuming *arugendo* that this statement can be construed as contemplating embodiments wherein SiF_4 is and is not flowed into the atmosphere, such does not establish a *prima facie* case of inherency. Specifically, regardless of whether SiF_4 is flowed into the atmosphere, such would not necessarily result in a partial pressure of a first halogen-containing gas that decreases during a first or a second reaction time. In any such event, a compensating amount of SiF_4 gas can be added to the reaction vessel such that the partial pressure of SiF_4 at least remains constant.

In fact, continuously adding a compensating amount of SiF_4 so as to maintain a constant partial pressure of SiF_4 (and a constant reaction rate) is precisely what Kyoto consistently and repeatedly teaches (see, e.g., Kyoto, col. 4, ll. 30-32 ("porous silica glass deposited around the core was heated at 1,100°C under 2 atm. for one hour with flowing SiF_4 at a rate of 2 l/min); col. 3, ll. 43-44 ("By continuously providing fresh SiF_4 in the vessel an optimum reaction rate can be maintained."); col. 4, ll. 48-51 ("When SiF_4 is continuously flowed during the addition of fluorine to the porous soot preform, the reaction rate of fluorine is not decreased and less bubbles are formed in the preform.")).

Nonetheless, the Examiner argues that Kyoto's teachings regarding continuously flowing fresh SiF_4 merely constitute preferred embodiments, whereafter the Examiner

cites MPEP § 2123 regarding the prior art effect of disclosed but nonpreferred embodiments. However, this section (and the cases cited therein) presupposes that there is a disclosed but not preferred embodiment from which to base the rejection. Here, no such embodiment has been provided. Specifically, the Examiner has not shown that any embodiment of Kyoto teaches or necessarily results in all of the claimed limitations of any independent claim.

To the contrary, several limitations of independent claim 1 (and other independent claims) are not taught or suggested by any embodiment of Kyoto. For example, Kyoto fails to teach or suggest that no more than 0.5 slpm of a first gaseous atmosphere flows out of a vessel during a first reacting time. Kyoto also fails to teach or suggest a first halogen-containing gas that has a partial pressure which decreases during a first reacting time. In addition, Kyoto fails to teach or suggest evacuating at least a portion of a first gaseous atmosphere from a vessel. Moreover, Kyoto does not teach or suggest providing a vessel with a second gaseous atmosphere including a second halogen-containing gas nor does it teach that the second halogen-containing gas has a partial pressure which decreases during the second reacting time. Accordingly, at least this combination of steps outside of the disclosure of Kyoto would be required in order to meet the recitation of, e.g., claim 1.

In response to Applicants' arguments that no motivation has been provided to make this combination of modifications to Kyoto and, in particular that no motivation has been provided to modify the teachings of Kyoto to provide for decreasing the partial pressure of a halogen-containing gas during a reacting time, the Examiner noted, "[i]t is also argued that the relevant issue is whether there is motivation to modify Kyoto to allow the decrease of the partial pressure. Applicant concludes there is no motivation because it . . . would make the process unsatisfactory for its intended purpose. Examiner cannot agree at least because Applicant has not pointed out any intended purpose and why the modification would make the process unsatisfactory. It seems clear to Examiner the purpose is to dope the preform. This purpose would clearly result from the proposed modification." (Final Office Action, page 10).

Applicants submit that modification of Kyoto to provide for decreasing partial pressure of a halogen-containing gas during reaction would render Kyoto unsatisfactory for its intended purpose because Kyoto teaches that an intended purpose of his invention "is to provide a method for producing a glass preform containing fluorine in an increased amount with fewer or no bubbles therein." (Kyoto, col. 2, ll. 45-48). Kyoto teaches that this object is achieved by maintaining a constant or non-decreasing reaction rate, which in turn is achieved by maintaining a constant or non-decreasing amount of SiF_4 reactant in the reaction vessel (*see e.g.*, Kyoto, col. 4, ll. 48-51 ("When SiF_4 is continuously flowed during the addition of fluorine to the porous soot preform, the reaction rate of fluorine is not decreased and less bubbles are formed in the preform."); *see also* Kyoto, col. 3, ll. 43-50). Accordingly, modification of Kyoto to allow the partial pressure of SiF_4 to decrease during reaction would lead to a decrease in the reaction rate at constant temperature, resulting in an increase in bubbles formed in the preform, thereby rendering Kyoto unsatisfactory for its intended purpose.

In response to the rejections that include reliance on secondary references, Applicants' reiterate arguments made previously. Specifically, Applicants submit that Walker, Dobbins, Simms and Korenowski each relate to non-analogous art and, in addition, persons having ordinary skill in the art would not have been motivated to combine Kyoto with Dobbins, for at least the reason that use of a halide-free source as taught by Dobbins (i.e., complete replacement of a halide-containing reactant) would render Kyoto unsatisfactory for its intended purpose because Kyoto specifically emphasizes the use of SiF_4.

In addition, persons having ordinary skill in the art would not have been motivated to evacuate at least a portion of a first gaseous atmosphere from a vessel and then provide the vessel with a second gaseous atmosphere in view of Biswas. Biswas relates to the application of a primary and secondary coating on an already drawn optical fiber and persons having ordinary skill in the art would not have been motivated to apply processing conditions relevant to applying coatings onto drawn fiber onto processing conditions for fiber preforms.

Accordingly, Applicants submit that independent claims 1, 30, 51, 132, 139, and 140 are patentable over the cited references. Applicants further submit that all claims depending from these claims are patentable over the cited references.

Moreover, Applicants submit that claim 18 is patentable over the cited references for at least the reasons discussed above and for the additional reason that Kyoto teaches away from the reaction set forth in equation 2 (Kyoto, col. 3, ll. 43-47 ("By continuously providing fresh SiF_4 in the vessel an optimum reaction rate can be maintained. This may be due to the fact that the dissociation reaction represented by the following reaction formula (2) could be suppressed.")).

Based upon the above amendments, remarks, and papers of records, applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Applicant believes that no extension of time is necessary to make this Reply timely. Should applicant be in error, applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Matthew J. Mason at 607-974-9993.

Respectfully submitted,

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